

THE
SOUTHERN AGRICULTURIST.

JULY, 1829.

PART I.

ORIGINAL CORRESPONDENCE.

ART. I.—*Mr. HERBEMONT'S Address to the President and Members of the United Agricultural Society of South-Carolina, at their sitting in Columbia, Dec. 1st, 1828.*

[We hope that every reader of our work will peruse with deep and undivided attention the able and eloquent address of our zealous correspondent, Mr. Herbemont, sent us through the United Agricultural Society of South-Carolina, and published by direction of that association. (See part 3d. of this number.) It is not often we have such comprehensive views of our own Southern agricultural affairs laid before us, in so interesting and feeling a manner, as in this well-written paper.

On the importance of the culture of the Vine to the Southern States, we shall take an early opportunity of expressing an opinion, when we publish a communication of Mr. Herbemont, now lying before us. What we especially would call the attention of our readers to, at this time, are his observations on Cattle, on Cattle Manure, on the Grasses of the country, and on rotation of Crops, as suggested to the Society he addressed; and the soundness of which will soon be discovered by our Southern countrymen, or we are greatly mistaken.

Every day our correspondents are adding information to that which they have already given us on the great fundamental principles of our Southern husbandry, and nothing is wanting but the united exertions of those who have influence amongst their countrymen, to enforce by their own example, good systems of cultivation; and the advantages would be so strongly illustrated, by the returns from the lands—by the very crops themselves, that they would be irresistible.

Mr. Herbemont does not ask, what can we do? but states the question to be truly, *what cannot we do?* and in this we heartily concur, for with a Southern climate; with the abundance of Cattle we have, or can so easily and so cheaply raise; with judicious rotations of crops, the road to wealth, and at the same time to comfort and abundance, is so plain, that we are confident none will be found, but the incorrigibly indolent, who will not travel in it.

If it were possible to carry into effect the important suggestions of Mr. Herbemont on population; if we could indeed get a strong reinforcement of stout Swiss and German arms and hearts, and plant them in any part of our State, this would be a consumation devoutly to be wished—an object well worth the sacrifice of a part of our public lands, if sacrifice it can be called, to settle them with as honest, as industrious, well principled a people as lives on the face of the earth—a people too, republican in their heart, and brave as they are virtuous and good.

What has become of the public lands formerly attached to the Cattawba Canal? Did not these lands revert to the State? If they are still public property, they would be greatly increased in value by a *judicious* division of part of them amongst good emigrants, such as Mr. Herbemont describes. These people remove from their own country in large divisions; they do not come singly or even by families, but *many families* unite, and never separate. If the State of South-Carolina, or if Georgia gave encouragement, and the district they removed to was healthy, and *large enough*, they would quickly be followed by other strong detachments.

Take the whole of Mr. Herbemont's communication, we consider it as a highly important one; and we venture to predict that the time will come when his instructions for the culture of the Grape, and making Wine, will be considered as amongst the most valuable communications in these volumes.

J. G.

Mr. President and Gentlemen:—Having at your two first sessions, presented to you a report of my experiments on the culture of the Grape, and also of some of my views connected with the same subject; it appears to me that I am impelled by a sense of duty, to report at this, your third session, notwithstanding the very unfavourable account I am obliged to make.

Indeed, the crop of grapes almost totally failed the past season, so that I made so little wine that the quantity is not worth notice, being only twenty-five gallons. It is of a good quality. The cause of this failure is, however, easily accounted for, and you all know that our last winter was a very uncommon one, having scarcely had any frost at all, and that the weather kept so warm that almost all who are in the practice of curing every winter their provision of bacon for the ensuing year, have never met before

with such severe losses in this way, as they suffered then. It is believed that there was more pork lost during the last winter in this State, than in any successive ten years before. The effect of this untimely warm weather on vegetation generally, was such that it seemed to derange its natural process for the whole of the following summer. In fact, plum, peach, and other fruit trees, blossomed (many of them,) in April and May, when it was too hot and dry for the fruit to set with advantage, and these, as also apple and pear trees, blossomed at different times, and late in the summer, in a most unexampled irregularity. This produced small stunted fruit, quite out of season. As an example, I gathered in October, peaches of the size of a common plum, sweet; but without a kernel, from a tree which usually bears fruit of the very largest kind, early in the month of August. The warm weather of the winter was followed by frost in April, of uncommon severity. The vine had then put out shoots from two to six feet long, and such was the intensity of the cold that, by freezing the sap, it burst the bark even of the old wood in many instances. Having conversed with our oldest men on the subject, it seems to be agreed that there was no such winter, to their recollection, unless it be that of the year 1780-81—which, as it was during our revolutionary war, seemed a providential favour to our naked militia.

While we must bow with resignation and entire submission to the behests of a kind Providence who knows what is good for us better than we do ourselves, we may be permitted to observe that, according to our imperfect views, such a failure could not have happened at a more unfortunate time. If, Gentlemen, you feel with me the vast importance of the culture of this invaluable plant, you will join with me in regrets that any thing should occur, calculated to retard its introduction. Shall we, however, be discouraged because we have been checked in our career? Failures occasionally occur in all the pursuits of men; and because a ship has been wrecked, shall the mariner forever abandon the sea? No, this is not according to our wonted practice and our habits of perseverance. The crops of every article of culture are liable, not only to fail sometimes almost totally, but also to vary much in extent; and this variation is probably greater in the produce of the vine than in any other; so that, if the crop is sometimes small,

it is also frequently more than double what is considered a fair one.

It may be presumptuous in me, Gentlemen, to lay before you my crude thoughts on a subject so important; but when the aim is the development of our internal resources, and the capability of our soil to administer most amply to all our wants, and also to our luxury, small considerations may be overlooked; but, if we add to this, the perfect practicability of making it, to an unlimited extent, to administer also to our wealth, to our power, to the permanency and security of our most valuable institutions, nay, perhaps, to the continuance of our very existence; every other feeling must be disregarded, except the wish of being useful. I therefore approach this subject unhesitatingly, and begin by asserting most confidently that our various soils and climates are adequate to the production of every thing we may possibly need. We have hitherto been only considered as capable of producing those rich staples which, in common parlance, distinguish the planter from the farmer; but, I believe it can easily be shown that we are also most eminently fitted for the productions which exclusively distinguish the farmer.

You all know, Gentlemen, that the great secret of agriculture is in the abundance of manures prepared to be used on a plantation, farm, or garden. It follows from this that the country in which cattle can be reared with the greatest facility, is the country where agriculture can be carried on with a success the most easily obtained. Now, I believe, there is no country north of us, which enjoys equal facility, and we only want system and good example, to follow the best practices and form the most beneficial habits. We all know the Crab grass (*Digitaria sanguinalis*,) and the Crow-foot grass (*Eleusine indica*,) but these two grasses have generally been known only as great pests to the farmer and planter; and few, very few, have ever tried to turn their luxuriance to advantage. When we see our Charleston papers defiled with advertisements of hundreds of bales of northern hay for sale, we seem not to be aware of the pertinacity with which these, among our native grasses, are forcing themselves upon our notice, to drive away from our external commerce, an article so disgraceful to our agriculture. The relation of one single fact, to which some others might be added, is sufficient to exemplify to your satisfaction, that I, here, advance nothing but what is most strictly true.

One of my neighbours, an enterprising and very intelligent man, has made this last summer, from eight acres of high land, first a great crop of oats, and then upwards of forty thousand pounds of most excellent hay, certainly equal, at least to the best Northern hay.* I have his permission, Gentlemen, to invite you to come and examine it. Now, this is uncommon only because it is seldom attempted; but there is an absolute certainty that all our light lands, our sand hills always excepted, are capable, by a good rotation of crops, to produce, at least very nearly the same result. Indeed the question the most proper seems to be, *not what can we do*; but *what can we not do*? Having an abundance of cattle, if we have not an abundance of manure, it is our own fault; and having plenty of manure, it is in our power to have great crops, by means of which we can raise as much meat, raise as many horses and mules as we can possibly need. How are we to avail ourselves of all these advantages within our power, is then the only question to be solved. This comprehends a difficulty not as easily overcome as would at first appear; for, to conquer it, we must not only conquer our old habits, but also our apathy, and the insufficiency of our efficient population.

In examining this subject, or indeed any subject of public interest at this momentous crisis, you will not expect, Gentlemen, that I can refrain from adverting to our political situation; a situation pregnant with every evil that can assail man in a civilized state. But, Gentlemen, place the foundation of your power on agriculture, and if proper means are energetically and judiciously contrived, she will confer upon your country the most durable, as well as the greatest of blessings: namely, wealth, an abundance of all the good things of this world, and political independence with the power to perpetuate it. Is it true that "it is agriculture which feeds the world?" Is it true that "it is agriculture which furnishes the materials which clothe the world?" Is it true that "it is upon agri-

* Produce of Hay near Charleston. Communicated to the Editor by the late Dr. Harris, from his *Pocket Book*.

By Mr. Turpin:

lbs. per acre.

From three acres Hay land, manured with 100 loads, 19,900 lbs. Hay—6,633½

From two do. do. not so highly manured. 8,700 lbs. Hay—4,350

By Dr. Harris: Half an acre, manured with 14 or 16 loads of manure, produced \$30 worth of Irish Potatoes, and upwards of 2,000 lbs. Hay.—*Editor of the So. Ag.*

culture that mankind are dependent for almost every necessary, and most of the luxuries they enjoy?" Is it true that she alone can produce and support a dense population, and is thereby the foundation of all power? Is it true that the number of our efficient or white population, is a great deal too limited, and on the decrease? Is it true that our country is capable of supporting a much more numerous one by a proper course of agriculture? Is it true that the strong, when prompted by self interest, has always trampled, and always will trample upon the rights of the weak? Is it true that we have now cause to fear being in the latter situation? If these be not true, then let us go on as we have hitherto done; but if they be true, have we not motives enough to spur us to uncommon exertions? I am fully aware, Gentlemen, that an agricultural society, though it be one formed of all the societies of the State, is not fully adequate to bring about such a revolution as alone can now save us; but I am also aware that your energetic representations to the legislature now in session, can do a great deal, and probably all that is necessary to be done. What are we to do? To answer this we need only look at our deficiencies, and if they are remediable, afford the remedy.—Our white population is too small—increase it. We have millions of acres of unoccupied land perfectly healthful and suitable to our purpose. Bring foreign cultivators of the vine, of the silk, of the olive, and farmers generally, and locate them suitably, and they will supply all your deficiencies. These foreigners can now be had with an uncommon facility; for parts of Switzerland and Germany are now overflowing with inhabitants, and sending away their superabundance.

It may be said, and I know it is strenuously insisted upon by many, that governments ought not to interfere with these affairs. This opinion is surely expressed without due consideration; for, if it be not the business of governments to place their agriculture on the best footing possible, to provide means for the population of its territory, whose business is it? Who else can do it? Is the state of agriculture in a country such an indifferent thing, that it must be left to form its beginning, and progress on as it may? To borrow the expression of a much valued correspondent from a neighbouring State. After saying that it is the undoubted duty of governments to establish and encourage their agriculture, he says: "A few thousand dollars expended from the pub-

lic purse, would lay the foundation of an agricultural wealth, and an agricultural power, that would stand the 'wreck of empires, and (all but) the crush of worlds.' "——"What has enabled France to rise in beauty and wealth, and power, above all her enemies, after thirty years of revolution, internal and external, but her deep rooted and wide spread agriculture? And the arts, commerce and manufactures, while they spread temptations before the spoiler, in a few ages are trodden down, lost and forgotten. But in agriculture, man is but a feeble instrument: the sun, the earth, the heavens, are the great machinery that are employed; and these, happily are beyond the control of the oppressor. Thus it is that Egypt, a prey to barbarian nations for many centuries, yet presents, in her rice, in her wheat and other products of her soil, monuments of her past wealth, as imperishable as her pyramids."

It is not absolutely impossible for these great things to be done without the direct aid of governments; for wealthy individuals, and agricultural societies richly endowed, might possibly do it; but it is extremely improbable that it will ever thus be done, and it has ever been the business of governments in all countries, and at all times, to make the successful efforts to place their population and agriculture on a respectable and permanent footing, after which, the exertions and encouragement by societies, and the example of patriotic and enlightened men have done, and will continue to do the rest. In short, governments must undoubtedly lay the foundation so that it may rest firmly, afford it protection, and leave the care of the superstructure to those immediately interested in its success.

We are naturally and essentially an agricultural, and therefore, a commercial community. Agriculture being the parent of commerce, needs the first patronage of government, by which the other is necessarily benefited. Why should the stream be most sedulously guarded and protected, while its source is choaked with rubbish that threatens to divert its course into other channels?

In order to test the value of what is here proposed to be done, namely, to favour the emigration of *agricultors* to this State, to facilitate to them the means of becoming, as speedily as convenient and practicable, proprietors of land; to encourage duly the introduction of new, valuable cultures; to recommend in an efficient manner, and chiefly by exam-

ple, the adoption of a proper and judicious system of rotation of crops (and this could be much more easily done by means of a great number of new settlers); in short, to replenish as much as practicable, our deserts with a hardy, healthy, industrious and honest population. Supposing this practicable, and it surely is; let us examine what possible disadvantage could arise from it, under any possible circumstance. Let us suppose that Congress, at their very next session will repeal, not only the tariff but all other laws that we so justly complain of, and that they sincerely abandon forever the unjust principles on which they are grounded; our advantages must still be in proportion to our wealth, our population, and our sources of revenues.— Let us suppose, what is much more probable, that if these obnoxious laws are repealed at all, they will only be partially so, and for a time, or that their principle is not given up; or let us suppose the very worst, that circumstances may hereafter compel us to direct resistance; will not the proposed state of things be the only one by which our resistance may be effectual? What other means have we of securing our independence, our very lives? I know of none: for we know too well that the justice of our cause is not sufficient to protect us, unless it is backed by stout arms and stouter hearts.

Many wealthy families of the low countries are forced by the unhealthiness of their plantations, to spend their summers abroad, away from the spot where their interests lie. I believe it would require very little more than their expenses of one season at the north, to form most valuable and useful establishments in our sand hills. Here, the low country planter would superintend his little farm, his vine-yards, and the making from their fruit abundant, pure and wholesome wines. Here, his presence would shower benefits, plenty, and happiness, on all his dependants. Here, he would be repaid for these blessings conferred by his agency, by health both of body and mind; by seeing his family, the dear pledges of his love grow and increase in vigour and wisdom. Here, their love of country would not be estranged from their own State, by being brought up abroad.— Here, he would cultivate in peace and plenty those relations which bind man to his fellow man, and are the never failing sources of all the happiness we are allowed to enjoy in this world. Oh! that I had the elegant pen of Virgil,

Delisle, or of Florian, to pourtray to you, Gentlemen, that simplicity of innocence, that rural felicity, which can only be obtained by cultivating, with the soil, all the mild, gentle, and peaceful virtues of rural life! But if I am denied this talent, my wish for your happiness and permanent prosperity, and that of our State, fills the whole capacity of my heart.

I have perhaps, Gentlemen, transgressed a great deal too much on your time and your indulgence, and I know that the great good I propose to be done, is not without its difficulties; but those are not insurmountable, and most assuredly the object is well worth the making of uncommon exertions; it is nothing short of our political and domestic independence, and, perchance, our existence. I wish to have these, my views of this subject, recorded, at least in your memories, Gentlemen, that when hereafter you are forced to reflect deeply on it, you may still be more inclined to forgive my pertinacity, than I fear you are now disposed to do, although I am truly much indebted to, and sincerely thank you for your indulgence.

I am, most respectfully, Gentlemen, your obed't. serv't. and fellow citizen,

N. HERBEMONT.

ART. II.—*On Upper Country Cultivation.—A method of making Cotton, Rope, and Bagging, by the Kershaw Committee.*

[FROM THE CAMDEN JOURNAL.]

To the Citizens of Kershaw District:—The duties laid on those articles which our foreign customers have to exchange with us for our cotton, in conjunction with the increased quantity made, has so far lessened the price of our great staple, that it does not enable our small farmers to live comfortably, and altogether removes the prospect of their increasing their property. This state of things points to the necessity of a strong appeal to the justness of our national legislature, to remove the present tariff; and, on our part, to the necessity of increasing the consumption of cotton, and of retrenchment in our ordinary expenses, and in

those matters, first in which it may be least felt ; and to this, more particularly, is it our duty to direct your attention.— First, then, the consumption of cotton may be much increased by substituting it for flax, and there may be seen, in this town, a large supply of cotton oznaburghs, wider, stronger, more comfortable, twice as durable, as low in price, and that stands the effect of wet and dry better than flax, and therefore more suitable as summer clothing for slaves. A large quantity has been used here the past season, and has been found to answer well. The next article recommended, is the use of cotton blankets, a material as warm, looking better, wearing better, and cheaper, than wool ; of which a small supply is now here, and a larger will be, in a few days. Blankets 9-4 by 8-4, weighing about 5 lbs. may be procured by the piece, at two dollars and three quarters each, from Messrs. Waln & Leaming, Philadelphia ; as also the cotton oznaburghs, by the piece of 30 yards, at 11 cents a yard, weighing about three and a half yards to the pound. The blankets are intended for house use, their greater liability to take fire than wool may be an objection, in their present state, to their use by the careless among slaves ; such as have been manufactured for them were at \$1 50 cents each. The effect would be sensibly felt by the cotton planter, if these articles should get into the general use which their suitability and greater economy ought to give them. Cotton comfortables, well known to you, are still cheaper, and would be a great saving. Suppose half the people of the United States to use cotton blankets, it would consume upwards of eighty thousand bales of cotton.

The next article recommended, is the use of cotton rope, for baling cotton, which is considered as suitable, in every way, as the hemp or tow rope, and cheaper at its present price of 14 cents, and has the advantage of being made on the plantation, out of the surplus labour thereon ; that is, such labour as is not engaged in any way in making the crop. One woman will spin one and a half pounds of inferior cotton a day, which will make fifteen yards of rope, and will bind, with five cords, one bale of cotton—one woman, two men, and two or three little boys or girls, will twist as many ropes of eighty yards in length, in one day, as will cord fifty bags of cotton. The rope can be made on the ordinary fixtures of every plantation for making plough-lines, though not with the same expedition.

The machine that gives so much expedition is a simple improvement that can be made by any plantation carpenter, with the expense of two or three dollars, besides labour, and with it, not to exceed ten dollars. [*See plan annexed.*—Many hundred bags of cotton will go to market from this neighbourhood so baled. The following comparison will show the relative value of cotton and tow rope.

	Cents.
Three pounds of tow rope, at 14 cents, the quantity necessary for five cords on the bale,	42
Up freight, outlay on the purchase before the actual use, damage, &c. not estimated.	—42
One and a half pounds, inferior cotton, at 6 cents,	9
One woman spinning and twisting, &c.	25—34

The consumption would be one and a half to two bales in every five hundred on all so roped, and if, in general use, would consume some thousand bales. What is made on a farm, out of such time as does not diminish the crop, is such a saving, that cotton rope ought to be made and used in preference to tow rope at 8 cents—cotton being at 10 cents.

The next recommendation is to make as much of your winter clothing as you can, or have wool to fill. For women, who are not exposed, home-made will answer well, possessing more durability than cloth made from the cotton machine; but for men who are much exposed in winter, their coats should be all wool, either made at home or bought; but this has been so long practiced and is so well known to you, that, having no new suggestions to make, it is not thought proper to enlarge upon it. The wool and cotton family spinners, running six and twelve spindles to one wheel, have been seen and examined, but are not yet sufficiently understood in practice, to justify a recommendation. It is not thought economical to make summer clothes for slaves, so long as you can purchase a suitable article at 11 cents a yard; at any rate, until it can be made in surplus time, of which there will be little left after your winter clothes and bale rope are made.

All that has been recommended to you, in the foregoing is recommended with confidence, as it is from the result of experience, and no facts are overstrained; it is easy to put in practice, and you ought to do so at once. Any aids in

our power will be furnished willingly, by your fellow citizens and friends,

THE COMMITTEE.

Camden, 22d October, 1827.

N. B.—It is believed that strong twilled cotton cloth, forty-two inches wide, with strong selvage edges, would answer well for packing cotton in, but we have not yet sufficient information to speak with confidence, and therefore cannot say more, than to recommend to all, who can afford it, to try experiments for their and the public benefit on this and other matters.

*Machine for Twisting Cotton Rope.**

Fig. 1.

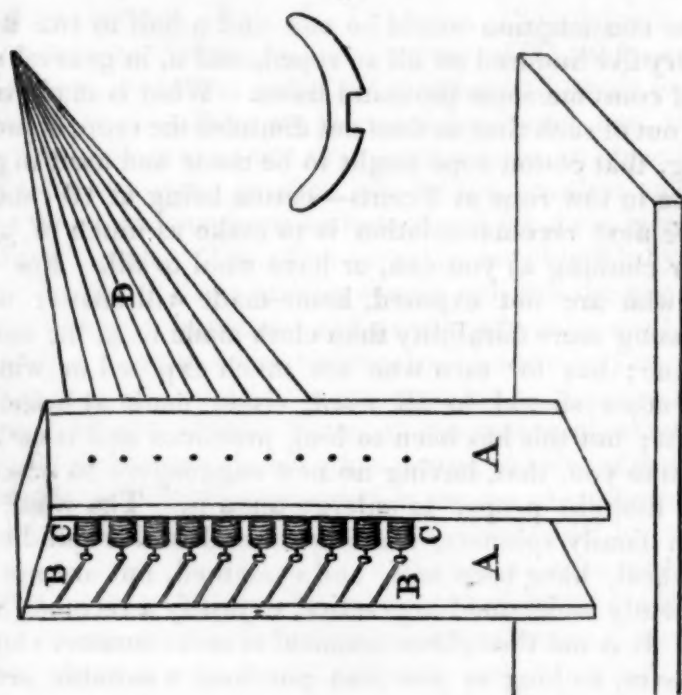


Fig. 1.—Machine to prepare the rope for twisting. A. A. two boards about four feet high, morticed into a thick board, and parallel to each other, ten inches apart, with grooves (B.

* The figures are all erroneously engraved. They ought to stand on the blocks so as to have the length of the block in front, to resist the strain, or pull, in twisting the rope. The handle, B. fig. 2, ought also to be behind, to prevent the person turning it from being in the way of the strands of the rope.

B.) half an inch deep, channelled out of the inner sides, with a corresponding gimblet hole, half an inch deep on the other board, to lodge the iron rods in having the spools on, at eight inches, or such distances apart that the spools can turn round without touching each other—ten round iron rods, or wires, one fourth of an inch thick, blunt at the ends, to pass through the centre of the spools, and lodge in the grooves.

In order to draw off the threads from the spools, a common turning lathe or other wheel, or a spinning wheel, may be used, with bits of hollowed boards (as represented in the Fig.) nailed on the rim opposite to each spoke, in shape like the upper part of a walking crutch, and twelve or fifteen inches across. Ten spools (and the larger they are the better,) have these iron rods passed through them, and are placed in the grooves; a thread from each, at the same time, is wound on the large wheel, which a grown persons turns, stopping when a thread breaks, and when the spools run out. The hollow crutch-like board is merely to enable the large wheel to hold a great deal of yarn; when filled, a grown person takes the ten threads in his hand and walks up and back the eighty yards that the twisters are placed apart, till he has put three turns, or thirty threads on each of the three spindles, (Fig. 2,) all are, of course, united on the single spindle (Fig. 3.)—the threads are kept from laying on the ground by three or four high benches, with pegs in their tops, to separate the three strands from each other, as is usual at rope walks—a man then turns the handle of the twister, (B. Fig. 2.) which, by its band, gives great velocity to the three spindles, (C. C. C.) and twists the rope rapidly—a small boy sits on the twister with the single spindle, (Fig. 3.) to prevent its being drawn up too rapidly by the twisting of the rope—if each strand does not turn at the same time, tighten the band, (F.)—see that it presses equally on all the spindles, and smear with pitch the under side of it.

When the strands are sufficiently twisted, they are platted together with a small block of wood, with three grooves, by turning the crank of each of the twisters in opposite directions—the rope is then stretched and wound into large coils; one and a quarter pound yarn makes a rope the size of a common plough line; one and a half pound yarn, the size of small bale rope, and two pound yarn, the size of large. I prefer the rope from the one and a half pound yarn.

All the above machinery for preparing the rope for twisting, may be dispensed with by those who understand the spooling and warping cloth for the loom; and indeed the rope may be made as plough lines are.

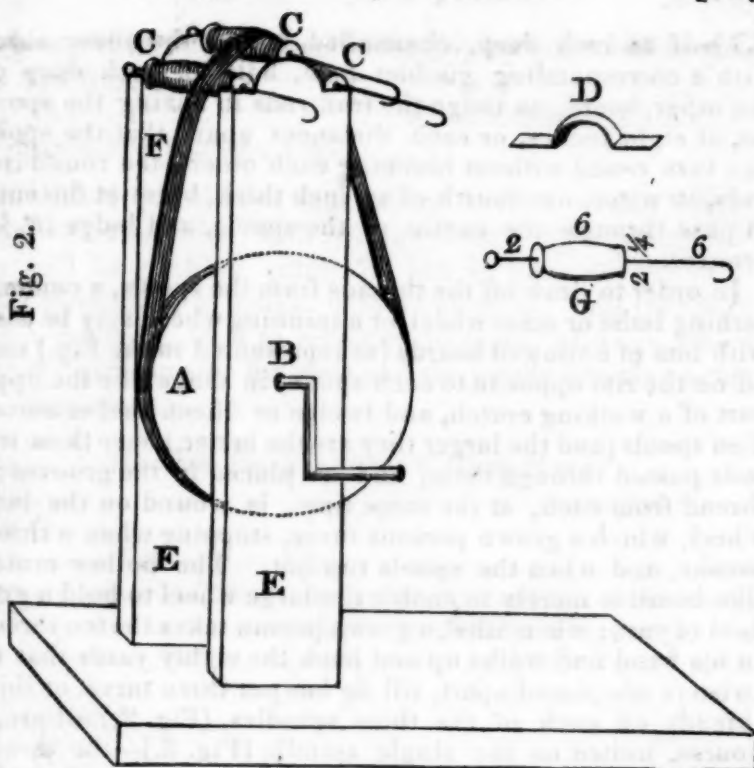
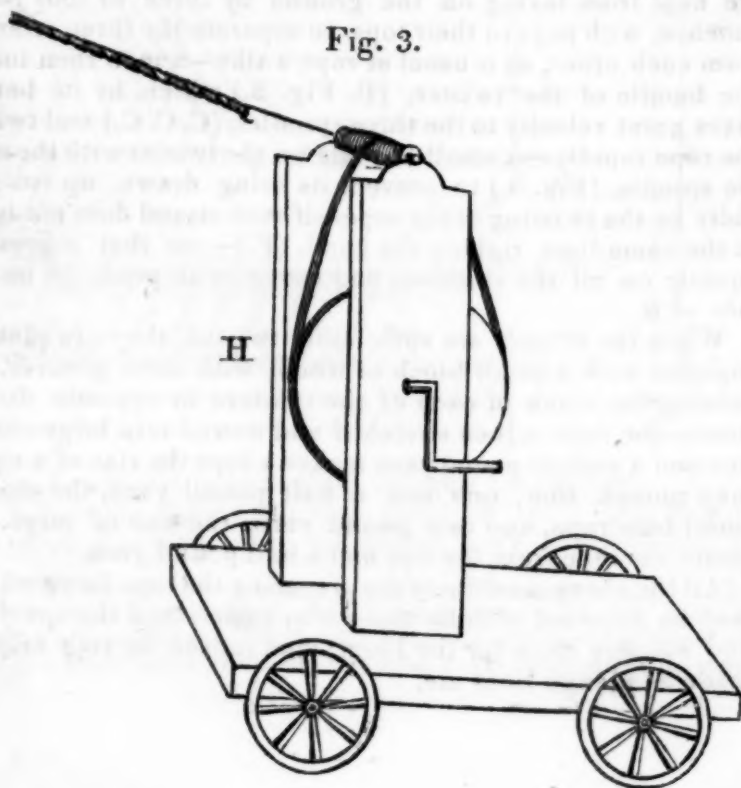


Fig. 2d, and 3d, Machines for Twisting the Rope.



A.—A block wheel, made by clamping two boards together, two feet in diameter, and three or four inches across the rim.

B.—A gudgeon and crank of iron, of the same shape and size, as used for a grind-stone of the same dimensions.

C. C. C.—Three turned wooden rollers, two and a quarter in diameter, six inches long, with nobs at the ends, to prevent the band slipping; also with iron spindles through the centre, half an inch in diameter, and sixteen inches long, hooked at one end, and a head at the other; the uprights plated with iron where the head of the spindle rubs; a thin iron plate (D.) confines the spindles on the uprights.

E. E.—Two planks, one and a half or two inches thick, sixteen or eighteen inches wide, three and a half feet high, placed six inches apart, morticed into a broad board or sill, to keep it steady. The gudgeons of the two lower spindles run in gudgeons beds, like D. (Fig. 2d.) fourteen inches apart. The upper spindle is placed on a rise in the uprights, five inches high. It is of consequence so to have the spindles placed, that the band should have a hold on them, and the band must even be covered with pitch, as the spindles are difficult to turn when the rope is tightly twisted towards the last.

F. F.—The band, a strap of leather, three and a half or four inches wide.

G.—A spindle with the dimensions of its several parts, in inches.

Fig. 3d.—A similar instrument with one spindle only, moved by a wheel and band, as Fig. 2. The wheel only one foot and a half in diameter; the joist or board into which the uprights are morticed, should be ten or twelve feet long, and stand on two small block wheels, so as to move up, as the rope is twisted in making; similar to those used in making plough lines.

Note, by the EDITOR.

In our January number, page 18, will be found an important communication from an esteemed correspondent in the upper country, who has favoured us with several valuable papers, although he has disguised the circumstance under various signatures. To his attention our readers owe the publication of the Kershaw District Committee, in our work, and we, on our part, expected to have followed the

first number of these papers with the insertion of the present, and of the engravings of the machines for spinning cotton rope; but circumstances beyond our control, have prevented us until the present number.

In addition to the reasons given by the Committee for substituting cotton rope, and *bagging* made also of cotton, for these articles made of hemp, which are to us conclusive, we would add another, and it is this, that the cotton of which the rope and bagging are made, so far from being lost, as is pretty nearly the case with the hemp employed for a similar purpose, would be immediately converted into some coarse manufacture of cloth, candle-wick, &c. &c. and being included by the purchaser in his estimates, would increase the value of the whole crop considerably, and by degrees be included and allowed for in the market price. We think in addition to cotton blankets, *oznaburghs*, *caps*, &c. that all Southern stores and shops, ought to use cotton cord and twine, for their various purposes. Our enemies, the monopolists, are vigilant in taking every advantage of us—let us show them what can be done in the South when *ecomony*, industry, and perseverance, are the order of the day there.

There are several ways by which we can *compel* other nations to give a decided preference to our cotton, besides those we have pointed out, (page 151,) and as the compulsion will be that of interest, and of course for their advantage, we need not fear producing a revulsion of feeling in them. Besides improving it in quality as much as we can, as there recommended, producing better cotton than any other country, and we mean *upland* cotton as well as the finest Sea Island, we ought to send our upper country cotton to market in the very best order or condition possible. The bags should be well put up, and clean, without a rent or tear in the bagging; but if these are sometimes unavoidable, then to have them neatly mended. If a steamboat, or even a wagoner, does not deliver property in good order, do not employ them, and where a planter uses his own wagons, he ought to make a point of attending to this circumstance particularly, for we have often seen upland cotton reduced several cents per pound in price, from the bad condition in which it came out of the wagons. *The smaller the planter's crop, the more carefully ought he to put it up, in order to prevent loss.*

We stated in some observations on indigo, (page 164,) that the mercantile charges on produce, until it gets to a foreign market, came out of the pockets of the planter or grower; and it is upon that principle that the price of the crop would be affected, if we substituted rope and bagging made of cotton, instead of hemp—that is, provided the cotton got to a foreign market in as good condition.

When a British or French cotton dealer, or even a spinner, turns his thoughts to the Southern States, with the view of importing from thence the cotton he either has occasion for, or wishes to adventure in, he does not dash into sheer speculation, as a gambler would seize the dice box, or a speculator in the lottery buy fifty or a hundred tickets, he calculates all the profits, let them be ever so minute or trifling. He then estimates all the charges to which the cotton is liable, and adding them to the cost of the cotton in this country, he compares the total cost and charges of the quantity he wants, with the cost of a like quantity in his own market, or some neighbouring one, sees how much per cent it is likely to yield him, and acts accordingly to supply his wants.

Let us suppose the cotton of three different planters for sale in Liverpool, all of equal quality, as to length and strength of staple and colour, one put up in wooden boxes and full of seeds, dirt, and straw; another in rotten hemp bagging, patched in every direction, with heavy tow ropes, of extra size, and full of large knots; the last neatly put up in strong cotton cloth, with strong but slender cotton bale-ropes, and without a rent or tear in the bagging; in short, in what merchants call "*beautiful order*."

It must be evident to our readers, that the merchant or spinner, who wishes to import cotton, must put down the wooden boxes as a total loss, as well as the seeds, dirt, and straws, the time to pick out which, must likewise be allowed for by a reduced price. He must, in addition, submit to a loss, almost total, on the hemp bagging and tow ropes, and to all the heavy expense of carrying these useless things from our country to his. But if, instead of losing on the cotton rope and bagging, he sells it for a trifle to make some coarse manufacture, say half a dollar, he considers that half dollar as a part of the profit on the cotton, and in so doing finds, that by comparing the value of the cotton

in cotton rope and bagging, on the mere *package* of which he would make a profit, with the others, on the *boxes* or bale ropes, and on the dirt and trash of which he would have not only to pay a heavy freight, and other expenses, but lose the whole value of the box or ropes, of the dirt and time to clean it out; he, of course, decides on buying the first, and what is better, *finds he can afford to give a far higher price for it.*

The same reasoning applies to every kind of charge, as well as to *loss in weight*, which is always taken into the calculation, by merchants.

In speaking of loss of weight, we would suggest a change in the custom of weighing cotton at private stores, especially when an allowance of weight is to be made for exposure to rain. *When a deduction, uncertain in itself, is to be guessed at, the party to be benefited, ought not to be the guesser.* Could not the bags of cotton be weighed at the public gins, where they are ginned on toll, as they are turned out by the gin master, who might be a sworn public officer? Could not this weight, which would be taken while the cotton is in a dry state, by a *disinterested person*, serve all the purposes of country dealings, until it arrives in Charleston? We believe there would be a slight loss in weight from the natural drying of the cotton, but the ratio of this would soon be ascertained by experience, and could be allowed for when necessary. The gin weights would thus place both buyer and seller in a state of security, and the charge made for weighing be found productive of infinite benefit to both parties, and of saving in the end.

The Brazilian and Egyptian cotton, particularly the latter, are now sent abroad in a dirty and disgraceful state, and are both fast losing their reputation.* This, therefore, is the very time for our planters to confirm the good character of Carolina, Georgia, and all other Southern cotton, and thus raise the price and secure the sale.

J. G.

* We have never seen cotton in *hard-pine boxes* but once, and that was in *South-Carolina*; we have often seen our cotton in *rotten bagging*, as described above. Messrs. Du Ponts wrote us that they had received *wool* from Charleston, put up in *rice tierces*. Such ill-contrived, ill-suited packages, are really hurtful to the general character of the Southern planter, and of the Southern States.

ART. III.—On raising Tomatoes from Cuttings, in answer to A. C. R.

"Stateburg, March 15, 1829.

Mr. Editor:—At the request of "A. C. R." through the medium of "*the Southern Agriculturist*," I beg leave to describe the mode of propagating the Tomatoes, from "*cuttings, particularly*," which I have practiced with considerable success for many years. I take care to have a sufficient quantity of seed sown in a nursery bed, early in the season, on a border on the north side of my garden, with a southern aspect, covered at night, and exposed to the influence of the sun in the day, which I keep in reserve, in case a late frost should destroy the volunteer plants; the latter I prefer, being stronger, and more forward; either of which I transplant, as the circumstances of the case may require, when they are of a proper size for the first crop. As soon as I discover them beginning to decline, I cut off about two feet of the tops of the freshest and most vigorous stalks for layers, which will still have fruit and blossoms on them. My bed being prepared and laid off in checks, four feet square, with a garden line, I cut trenches on one side of the checks, in which I lay the cuttings horizontally, one foot in the ground, and the tops raised up at the intersection of the lines. At this stage of their growth, they will have many buds, or fibres, ready to take root, which seldom fail unless in very dry weather.

As my garden soil is uncommonly thirsty, and as I have sometimes failed in extraordinary droughts, I would recommend to the admirers of this delicious vegetable, a mode, which answers every purpose of the other, and in which, I have never failed, in a single instance for twenty years, in having an abundance of Tomatoes throughout the whole season. I take care to have a supply of plants in the nursery bed, at the proper time for setting out a late crop, they will then be laying on the ground, long and spindling, bearing, and in blossom, with many eyes ready to take root. I draw these up, and lay them as before directed, covering the roots and all the stalks, excepting such a proportion as in my judgment should be left erect, taking care not to break them; these having roots, will be certain to take, and con-

tinue bearing until a frost. The stalks above recommended, I think, must have a considerable advantage over plants of a younger growth, and recently taken from a late nursery bed, inasmuch as they have a greater supply of roots, which immediately put out from the joints, in addition to the first, and will sooner produce a vigorous growth of the plants.— On the day I apprehend a frost, I pick all which are ripe, and all which have any tinge of red on them, and lay them on pieces of pine bark in the garden, covered with grass, or pine straw at night, and opened in the day, which will ripen them more perfectly in a few days; after which, I lay them on a shelf, and unless the weather is unusually cold, or wet, I have them frequently until December. By observing this plan, I had a few tomatoes at my table on last Christmas day, as a rarity. Nearer the sea-board, there can be but little doubt of its succeeding better. Should this communication throw any new light upon the subject, or be productive of benefit to “A. C. R.” or any reader of your valuable work, I shall be highly compensated for having made it.

I am, respectfully, Sir, your most obed^t. serv^t.

I. O. H.

Note, by the EDITOR.

We have always preferred using plants taken out of a seed bed, in preference to the *cuttings*; for in addition to the reason given by our correspondent in the above communication, we have found the plant more vigorous, and the crop more abundant: they, moreover, will continue longer in a bearing state. Unless the season be moist, or considerable care taken, the cuttings are very apt to fail; when under similar circumstances the *plant* will take root and grow freely. Our correspondent picks off the *ripe* fruit, and *those tinged with red*, and preserves them for future use. But if he will, on the approach of a frost, take up his vines, with *all their fruit* on them, and hang them up under cover, in some out-house, he will have a large addition to his *winter stock*; for he will find even the small green fruit will mature, (as far as to colour,) the larger

ones will prove very good, and at that season of the year, very acceptable. The method we usually pursue, is to throw the vines over a pole, and place it in our barn, or any convenient place, and there let them hang, taking from the vines only as many of the fruit as are wanted for use. They keep well in this way, and a large quantity can be secured, with very little labour.

J. D. L.

ART. IV.—*Observations on a trial and alteration of the Sugar Mill, (See vol. 1, p. 364,) by W. W. & T. F. HAZARD.*

To J. D. LEGARE, Esq.

Dear Sir:—We have made a fair trial of the little Sugar Mill I sent you a sketch of, and ground out with one mule and two boys to feed, thirteen gallons of juice in ten minutes; being the quantity our juice trough contained: but for want of the proper instruments, we could only make an abundant supply of excellent syrup from cane buried in November, until our planting was completed in March.

We found it necessary to make some alterations in the plan of our mill, by extending the braces above the juice bed, in order to render the mill more steady and firm. The propelling arm should also be fixed oblique, with a sloping shoulder on the head of the centre cylinder, just sufficient to clear the cap of the mill, and admit the end of the arm to come down within two or three feet of the ground, so as to attach a swingletree to it, by which a single mule works the mill with ease.

We have sent you a bottle of juice expressed from cane, exposed to all the frost and snow that has fallen. We put about thirty gallons in a whiskey cask, with two quarts of syrup and one of whiskey, and in three days after, it tasted like champagne a little tart. The experiment was made with a view to test its quality for making vinegar; and any advice you can give us on the subject, will be thankfully

received, as we believe it is altogether a new application of of sugar cane juice.

We are, very respectfully, your obed't. serv'ts.

W. W. & T. F. HAZARD.

West-Point, 13th March, 1829.

Note, by the EDITOR.

We shall make inquiry into the manufacture of vinegar, from the syrup of sugar cane, and inform Messrs. Hazards', as well as our readers generally, of the result. During the late war we know that vinegar was manufactured to a considerable extent in Charleston, to supply the consumption, the usual channels being stopt by the blockade of the coast.

ART. V.—*On the Chickasaw Pea*; by J. J. MYERS.

To the EDITOR of the "SOUTHERN AGRICULTURIST."

"Solitude, Fairfield, 1st April, 1829.

Dear Sir:—I have heretofore regularly received, and with much pleasure read, the numbers of "*the Southern Agriculturist*." I think the work good, and calculated to be very useful to our country generally. I cannot, however, refrain from observing, that so far, it has been more advantageous to the planters of the lower part of the State, than either to the middle or upper;* but this, perhaps, has been our fault. Many writers in "*the Southern Agriculturist*" appear to be very much surprised that such a tardiness exists among our planters generally, in lending you their aid, and communicating the result of their experience. This is a melancholy fact, but one which I hope will not be lasting. Improvements in every useful science are made very slowly,

* Our correspondent finds we have already began, and we shall endeavour to do our part; but the upper country, we mean our correspondents there, ought also to do their's—we want details from thence greatly—the minutiae of their management.

and from the length of time necessary to arrive at satisfactory results, are particularly destined to be so in agriculture. The fact is, that agriculture, *as a science*, cannot be said to exist amongst us. The careless and ignorant manner in which it is generally carried on, places it in a most barbarous condition. Our planters have followed the footsteps of their fathers so long, that they find it difficult to leave off the good old way, in order to think and to experiment for themselves. In the first settlement of this country, when the land was new and fresh, a very careless mode of cultivation would produce abundant crops; but it is a fact that much of our best land is nearly exhausted, and some entirely so. The consequence is, that our former method of cultivation produces small crops; whereas, if a scientific system of manuring were adopted, and a nice and careful mode of culture pursued, we would make more plentiful crops, and improve our lands every year. Instead of having recourse to such judicious means, many of our good citizens sell their lands for whatever they can get, and remove to a new country. Others are contented to remain and get along as well as they can in the old way. Here and there a few are found who are willing, and are endeavouring to improve themselves in the humble, but useful science of agriculture. Principally by the exertions of our friend and fellow citizen, William Ellison, an agricultural society has at length been got up in our district, which, if properly conducted, may result in much good to the interest of the country.

I must, Mr. Editor, beg pardon for transgressing on your patience thus far, as I commenced this communication for the purpose of giving you the result of rather an unsatisfactory experiment with the Chickasaw Pea. I am, therefore, unable to give such answers to the questions asked by a querist, in one of your late numbers as will satisfy him.

In June last I obtained a small quantity of this pea, from Mr. Herbemont, of Columbia, and planted them according to his directions, as given in "*the Southern Agriculturist*." The peas came up and grew well, although on rather poor land. The result of the experiment was not as satisfactory as could have been wished, in consequence of the injury the peas sustained from a flock of geese, which I found impossible to keep away from them.* I am well satisfied, however,

* In the North they would speedily have rectified this evil, by yoking each goose; a simple and excellent preventive to their doing mischief in

that the Chickasaw Pea would be valuable to the planter for several purposes. Sowing them broad cast, and ploughing them in, they would afford a good summer and fall pasture for horses, mules, and stock of every kind. It is very probable if they were ploughed in while green, they would answer well for manuring the land, but this remains for experiment. *They do not, like the common cow pea, shed the leaf in curing*; and this is a great advantage. In short, I think them most valuable for the great quantity of fodder they would afford to the planter for wintering his horses, mules and cattle. I see no reason why this pea would not grow well with corn, and intend trying it this season.

I am, Mr. Editor, a young planter, and my experience, consequently, limited. Whenever any thing occurs to me, however, which I think worthy of your notice, you shall hear from me again.

Your's, respectfully,

JOHN J. MYERS.

ART. VI.—*On preserving the Sugar Cane during the winter, for seed*; by T. SPALDING.

“Darien, March 30, 1829.

Dear Sir :—Your letter of the 20th inst. is before me. Rattoons should not be depended upon as a crop, in any part of the United States. The ribbon cane *rattoons*, are better than any other of the species; and upon rich new lands, or upon well drained river land, in warm situations, that are surrounded by water, will answer for half the crop; but in most situations it would be better to depend altogether upon plants, only considering the *rattoons* as applicable to seed, which they are well adapted for. Where no other crop but cane is planted, as in Louisiana, and where four or five acres to the hand is cultivated, of necessity they

fields. We believe, if the truth were known, more time and labour are wasted from the careless manner business is conducted, and stock of all kinds managed, than from any other cause. No stock ought to be allowed to enter any field. The fields on a farm or on a plantation, ought to be as sacred as the garden, or if there is no garden, as the dwelling house.

depend much upon ratoon ; this would not be the case if they had a mixed crop of either rice, cotton, or indigo, with which to alternate their cane fields ; *and it is this mixed crop, that, in my various communications, I have recommended, because, among other reasons, manure in excess, does contaminate the juices of the cane, but only when in excess.*

You will find, in my first letter which you published from the Georgia papers, directions for preserving the seed in winter—the cheapest method is the best—that is, to throw two rows of cane into the intervening valley, and after laying, say for ten days, to wilt the blades, at the approach of severe weather, to list over them two or three inches of earth.

Your's, with esteem, &c.

T. SPALDING.

ART. VII.—*On Planting Sprouts from the Sweet Potatoe; by G. M. SPAIGHT.*

When other potatoes are planted, a large flat bed, from three to four feet in width should be prepared for planting the potatoes you intend to get the sprout from ; take the potatoes whole, and place them on the bed, nearly touching each other. After this has been done with regularity, cover them the depth that is common in planting other potatoes, observing that the earth is well pulverized before it is thrown over them.

If the season is dry, it is necessary to water them every evening, both before and after they have germinated ; this I think necessary, because there is much nutriment required to support such a cluster of plants in so small a space. This plan I adopted after my first year's experience, which plainly indicated, from a yellowish appearance in the sprouts, and a disposition to drop their leaves, that much moisture was required for their support. By pursuing this plan in a dry season, I frequently have vines among the sprouts of a length sufficient for planting, when the potatoe planted at the same time, has hardly made its appearance above the surface.

After the sprouts have grown to the length of three or four inches, (last of April,) have good lively earth well pulverized thrown among them with a riddle, or something of the kind that will scatter it regular by and lightly; covering them nearly to the top or bud. In doing this, some of the undersized ones will perhaps be covered entirely over; they should be uncovered with care, and the dirt should be thrown among them three or four weeks before the time of planting the sprouts.

This is done for the purpose of increasing the number of roots to each plant, which makes them unquestionably more productive, and will enable them to stand a drought much better. Where particular attention is paid to this part of the culture, by the time the sprouts are of a sufficient length for planting, (eight to twenty inches,) each plant will be well supplied with roots, nearly half its length.

The 25th of May is about the time that I generally consider the shoots of an age and size sufficient for planting, though the last year I considered them sufficiently large ten or fifteen days previous to this time; but owing to a dry spring, I deferred planting until the 26th, with then only a light rain, (such an one as would not have answered for planting from vines,) and not a drop for ten days after.

Have the land prepared as though for other potatoes, (ploughs are decidedly best calculated to pulverize the earth,) for when prepared by the hoe alone, there are many hard clods which form a principle part of the bed; but if prepared by proper ploughs and ploughmen, the clods are measurably evaded. Plough any common land twice over at a seasonable time before planting, and it will be freed from clods which obstruct materially the expansion of the young potatoe root.

After your land is well prepared, as soon as the season will admit, *after the sprouts are sufficiently large*, make a bed as though for other potatoes, take a hand-spike, sharpened, and make holes in it nearly to the bottom, so as to plant deep from five to six inches apart.

Select a careful hand to dig up the bed containing the sprouts, which can be done with ease, by drawing a hoe carefully under them—each potatoe will contain from three to six plants. A careful hand should be selected to break them off and lay them in a vessel for the hand that drops them—the dropper places each plant in the holes made for

their reception in the bed—(I find this plan advantageous, because it keeps the air and sun from the root of the plant, which are destructive to their growing off immediately.) A hand should follow immediately after, and press the dirt well around each plant, leaving nothing but the bud of the smaller ones above the bed, and but as little of the larger ones as possible. I have never planted the sprouts in tasks, but am of the opinion that *two hands can plant as much land in sprouts, as three can with vines.** This is not the greatest advantage the sprout has over the vine, for the land is not torn up in the alleys to the yellow dirt, as may be seen too often on the top of beds planted with vines, (particularly in the pine lands of the middle districts.) The mode of culture may be considered the same as other potatoes.

By these plans the last year, I made considerably upwards of four hundred bushels per acre, on lands that had been lightly manured the year previous with oak leaves, and trodden by stock, (say four wagons loads of leaves, broadcast, to the task, and eighty or ninety head of cattle, penned two weeks on an acre.)

There is not a doubt on my mind but that the sprout keeps *better* than any other potatoe, and their size and beautiful sleek appearance far surpasses any potatoe I have ever seen. I plant principally the yam. Your's, &c.

E. M. SPAIGHT.

ART. VIII.—*On the Persian Sugar Cane; by W. W. STARK.*

"Church Hill, Abbeville District, 5th April, 1829.

Dear Sir:—The great staples of the West Indies, as well as those of this country, are exotics. Proper experiments may convince us that we have heretofore underrated the capacity of the Sugar Cane, to adapt itself to climate. The intro-

* Near Hickory hill, from whence Mr. Spaight dates his letter, we have been informed a poor woman, much crippled in her hands, yet active, and, as it appears, willing to work, managed by planting sprouts, to raise a sufficient quantity of potatoes, to find herself, her husband, (who is altogether a cripple, and incapable of work,) and another person, during the year. This fact was related to us as a proof of the superior advantage of planting from sprouts.—*Ed. of So. Ag.*

duction and successful cultivation of this plant would revive Carolina wonderfully; I know no event better calculated to "light up a smile in her aspect of woe." The mother country of fruits, Persia, produces a species of Sugar Cane that ripens four months sooner than the cane of the West Indies. The climate of that country is probably not warmer than South-Carolina; I am inclined to think it is colder. Persia is filled with mountains which are covered with snow eight months in the year. In its northern parts the snow this winter has been from four to five feet deep, which is probably not the case in any part of the United States. Would not the culture of the Persian cane be an experiment worthy of patriotism? Would not our delegation in Congress confer a favour on their State by effecting its introduction through the agency of our Naval Officers, or Mediterranean Consuls.

Respectfully, your obed't. serv't.

WYATT W. STARKE.

ART. IX.—*On Manuring, by Enclosing, and Rotation of Crops.*

The system of manuring by enclosing, is a very important one to the middle districts of Carolina and Georgia, where the soil is thin, land comparatively cheap, and timber abundant. The writer has practised it for more than ten years on his plantations in Barnwell district on Savannah river, about five and twenty miles below Augusta, and in the county of Burke, in Georgia, immediately opposite; but like most planters who do not reside upon their plantations, he has it not in his power to furnish those minute calculations, and exact results, which bear on their face, mathematical precision. He must content himself, therefore, with giving a sketch of his system, with the assurance to all such as may be disposed to make the trial, that he is convinced that his estates are in better condition than if he had continued to invade his wood land, and abandon his old fields to his own, and his neighbour's stock.

The plantation in Barnwell district was settled in January, 1812. Not a tree had been felled upon the land, and

from that period to the present, only four hundred and fifty acres have been cleared. During the first nine years, a few acres only could be spared from cultivation, but these were left within fields which were planted, and the least fertile spots selected for the experiment, until the quantity was augmented to one hundred and thirty acres, or about one third of the plantation.*

The first step was to dispense with cross fences, to prevent faithless overseers from pasturing the ground intended to be rested. Except to separate the corn from the cotton land, they were entirely removed. The land which lay out, and that which was cultivated, were within the same enclosure, and separated only by a turn row.

The next was, to have the land turned over in the month of September, (the 15th is the day fixed for commencing this labour, with the positive order that no other work is to interfere with it,) as deep as a good horse or mule could effect it with a Dagon plough. This period is selected for turning in the weeds and sward, from the belief that the vegetable coat has reached its full maturity, and yet, not entirely deprived of its gaseous parts; and, to afford sufficient time for the work to be finished, before the occurrence of frost.

A crop of cotton is then planted on the land which has been suffered to rest: the next year it is put in corn; and the third it is rested. This is the usual rotation, to which however, exceptions are made in favour of particular parts of fields.

Manuring, by inclosing, is not recommended as a substitute for manuring from the stable yard and pen. It is proposed as an auxiliary; but an auxiliary of higher dignity and importance, in the opinion of the writer, than the principal itself, where cotton is the staple, and lands are cheap.

More than fifty acres have never been manured any year on this plantation, with the cotton seed and manure from all other sources, but the fields to which it has been applied, have been annually planted since its settlement, thus affording the other fields more frequent changes, as they receive none themselves.

This plantation consists of that description of land which is called hammock, lying between the hilly pine land and

* We hope our readers will remark this cautious and judicious mode of introducing a new system of operations on a plantation.—*Ed. of So. Ag.*

the river swamp; originally free and fertile, but not durable. The clay approaches the surface in some spots on the margin of the swamp, but in general is several feet beneath. The beneficial effects of rest, however, are apparent on both kinds of soil; for neither were entirely exhausted, before the opportunity of self-resuscitation was afforded. From some of the last fields that were cleared, only three crops were taken, when they were suffered to take their turn in resting.

On the plantation in Burke county, Georgia, the same mode of manuring was commenced about the same period. It is the poorest of pine barren, cultivated from necessity, to furnish provisions for a set of mills. The lumber is the crop for market. A subsistence for the labourers, mill hands and beasts, was all that was expected, when the river swamp, distant four miles, and formerly cultivated for this purpose, was abandoned. The inconvenience, loss of time, and extra labour imposed upon the beasts of burthen in wagoning their daily bread, together with the uncertainty of swamp lands on the Savannah river, at the period the change was made, were the chief causes for the cultivation of such poor land. Notwithstanding the poverty of the soil, perseverance in this system has enabled the owner to do more than he anticipated, for he has added forty acres of cotton to his crop for the last three years.

The following is the product of the last year, confessedly a bad one for provision crops, viz:

Field, No. 1	30 Acres.	Product	302 Bushels.
" " 2	40 "	"	398 "
" " 3	40 "	"	433 "
" " 4	30 "	"	323 "
" " 6	45 "	"	218 "
" " 7	31 "	"	96 "
" " 9	23 "	"	192 "
" " 11	21 "	"	93 "
<hr/>		<hr/>	
260 "		2055 "	

In Cotton 40 Acres. Product 16,300 lbs. in the seed.

The stable, and other manure, is applied annually to fields No's. 3 and 4, on account of their proximity to the settlement, and they therefore receive no rest. Field No. 7, and about twenty acres in No. 6, were new ground, from which little was expected; but the product of these, as

well as the other fields, was greatly diminished by the excessive drought of the summer. No's. 1, 2, 3, and 4, it will be perceived, averaged a fraction over ten bushels.—The deficiency of 6 and 7, has been accounted for; and the produce of 9 and 11 was very much diminished by vermin, these fields being bounded by the mill creek. The result of the whole is a fraction less than eight bushels per acre, and six pens of pea vines, cured as recommended in your May number. There is not a cross fence on this plantation, the portion annually cowpenned for turnips, rye and oats, excepted.

The fields have been measured with the Surveyor's chain, and the contents calculated accordingly.

This communication is not made as a successful result in planting, but as an approximation towards it, in making more than an ample subsistence, on the poorest lands in the Southern country, by a systematic attention to their improvement; and is submitted with the hope, that some of your readers may be induced to make experiments in this mode of keeping their *good* lands in heart, and *renovating* their old fields, already abandoned.

PISUM.

Savannah, May 15th, 1829.

OBSERVATIONS BY THE EDITOR.

We thank our unknown correspondent for having so practically and so *opportunistically* illustrated our observations on *Upper Country Cultivation*, so far as enclosing is concerned, and the application of grass crops to fertilizing the soil. If, instead of manuring the cotton crop, or even the corn, manure was spread over the grass lands *on the surface*, that is, over the fields which are not to be planted that year, but of which the weeds and sward are to be turned in, in the fall, we are satisfied the effect would be more beneficial to all crops cultivated. For in the first instance, the crop of grass and weeds would be far heavier and do more good when turned in; second, the manure would be prevented from being washed away by the grass, and, third, any pernicious effects of the manure itself upon cotton, sugar, potatoes, &c. would be entirely done away. *Some of the*

diseases of cotton, we strongly suspect, too, would be got rid of. See Mr. Seabrook's observations on manuring fine cotton, vol. I. p. 78, also Mr. Spalding's, (p. 313 of this number,) of the deleterious effects of manure applied particularly in large quantities to the crops themselves, would be prevented by its application to some preceeding crop, as to grass here recommended, or to clover, as in page 285 of last number.*

But in addition to these essential improvements, which we rejoice to hear have been so long adopted, could not our judicious and *energetic* correspondent (for we see the marks of both qualities,) go a step or two further, and introduce a more extended rotation of crops, including within the wholesome regulation already under weigh, some useful, and at the same time, ameliorating crops, to come in between the cotton and corn. He is not to be told that both of these crops are great scourges of the soil, for his system is adopted in order to counteract the exhausting qualities they unfortunately possess.

On his Savannah river estate, where provisions are the object solely in view, it appears to us he could adapt the Irish potatoe, planted in October or November, in the field lately in grass, which could be so ploughed in as greatly to favour this crop. We do not mean this potatoe to be planted as too many do here in the neighbourhood of Charleston, by purchasing up the sweepings of the hold of some northern sloop, or the refuse of half a dozen cargoes sweated, frosted and rotted in a damp cellar, but a prolific kind sought out, as the seed of other valuable crops ought to be, with diligence and care: such kinds as give in other countries, two hundred and fifty to three hundred and fifty bushels per acre.

The rotation we would suggest, and we do it with great deference, is, first, grass manured, to lay twelve months, at rest; second, Irish potatoes, at the end of October, to be dug as soon as they can be eat, and consumed by every thing that can eat them; third, corn with cow-pea, or Chickasaw pea; fourth, oats for horses, or *wheat* for negroes; fifth, slips; sixth, grass as before,† a single acre in

* We should have recommended the *cattle manure* to the clover, (p. 285.) but we feared to ask too much at once.

† Would not this rotation suit the rice planters on river swamp, in thin provision land?—*Ed. of So. Ag.*

each of his well arranged fields, could, we hope, be spared, and might, if this rotation proved a good one, be an additional benefit to our country, as we are confident the useful example he has already set, will be, when better known. The Irish potatoe will grow well in light soil, and may be preserved in a sound state a considerable time, if put up in dry sand, in layers of sand and potatoes, alternately.

We do not see why the English pea, *the large marrowfat*, should not be used as a field crop for provisions. It stands the climate well, if sown in January, and is exceedingly productive if planted five feet apart. It would be off the ground in time for slips, and would, as *split peas*, furnish an agreeable change of food for *our* people, as it does for sailors, and other labourers in other countries. In Great Britain, some of the strong stemmed beans are planted with the pea, as supports.

It is a matter of great importance to introduce *leguminous* crops among us, and especially such as will combine *these three desirable objects in one*, namely, to ameliorate the soil; to serve as provisions for man or beast; and to stand the winter of our climate, when there is no grass, which would save much labour in the cultivation.

We have tried saw dust as a manure, but found it not only useless, but hurtful, for as we applied it, it would not rot. We find since we abandoned it, the following observations, quoted from Mr. Kirwan, which may be of use to our correspondent. We would state as an encouragement, that a well known agriculturist informed us, that he had applied rice chaff, a very imperishable material, to grass land, as a top dressing, *scattered on the surface*, and found it succeed well. The extract from Kirwan is as follows: "Hasenfray and Fourcroy attest that shavings of wood being left in a moist place for nine or ten months, began to receive the fermentative motion, and being then spread on land, putrified *after some time*, and proved an excellent manure." No doubt some of the saw dust about an extensive set of mills has fallen into low moist places some eight or ten months ago. We should be pleased to hear that our correspondent tried this mode of managing an article he must have in great abundance, and that he succeeded in converting it to a useful purpose.

J. G.

PART II.

SELECTIONS.

ART. I.—*On Back Country Cultivation.*

(Continued from page 287.)

OBSERVATIONS BY THE EDITOR.

But many will say these are visionary plans, and notions resulting from the customs and usages of thickly settled countries, and impracticable in ours. We assure our readers that a rotation of crops is no where impracticable; and we give them an illustration by an American farmer who had to plough, sow and reap, with a more obstinate race than even our negroes, who yet reaped the advantage of a similar system.

We hope Mr. Lorain's statement will be maturely reflected on. It is true he planted no cotton, nor is the course of crops in Pennsylvania any more than in England, (p. 287,) like ours or the Italian's; but a judicious planter will from all these methods, be able to improve his own practice of husbandry; he will observe the great advantage of *grass crops*; and if he abandons the old system of eternally cropping corn upon cotton, and cotton upon corn, and wheat and oats, *without rest or intermission!* if he encourages by good manuring, heavy crops of grass or clover, when that has hitherto been wanting, he may be satisfied that an immense increase of produce, profit, and comfort, will certainly be his reward.

"Perhaps the merit of convertible husbandry, (*or of a rotation of crops,*) united with soiling, may be better illustrated by a comparative statement of the crops grown in the year 1811, with those sold to me by Mr. Shriver, and grown by him the same year that he sold the premises to me. His crops were con-

sidered large, and great efforts had been made by him to make them so. Both his crops and mine are rated at the same average prices.

The merits of convertible husbandry, united with soiling, explained and illustrated by a comparative statement of crops. On winter fattening cattle. Reason assigned why any given space of grass grounds will furnish much more food for cattle when the grass is fed to them in the yard than if they were pastured on it. On the use of oxen in place of horses.

Statement of Mr. Shriver's Crops.

64 acres, 242 $\frac{1}{2}$ bushels of oats at 43 cents,	-	\$104 27
12 $\frac{1}{2}$ do. of wheat, barley and oat tailings, mixed, sold for	-	5 83
197 $\frac{1}{2}$ do. of potatoes at 50 cents,	-	88 50
36 $\frac{3}{4}$ do. of wheat at \$1 75	-	64 31
5 $\frac{1}{2}$ do. of buckwheat at 50 cents,	-	2 75
9 tons of hay at \$17 50	-	157 50
5 do. of corn fodder at \$8	-	40 00
226 $\frac{1}{2}$ bushels of rye at 80 cents,	-	181 20
155 do. of barley at 90 cents,	-	139 50
250 do. of Indian corn at 60 cents.	-	150 00
8 acres rented to a widow lady, with the old farm house, and an old barn principally used for pasturing one horse and three cows,		100 00
2 $\frac{1}{2}$ acres rented to a negro man, with a small house,		29 16
31 $\frac{1}{2}$ acres in pasture, woods, yards and roads. The negro had the garden, which is included in his 2 $\frac{1}{2}$ acres.		

106 acres.

\$1,063 02

Statement of my Crops.

13 $\frac{1}{2}$ acres, 277 bushels of wheat* at \$1 75		\$484 75
25 tons of superior stubble crop hay at \$7 50,	-	187 50
15 acres, 1086 bushels of Indian corn at 60 cents,		651 60
196 do. of barley at 90 cents,	-	176 40
23 tons of corn fodder at \$8,	-	184 00
7 $\frac{3}{8}$ acre, 263 bushels potatoes at 50 cents,	-	131 50
56 $\frac{5}{8}$ acres, 130 tons of hay at \$17 50,	-	2,275 00
Received for soiling horses,	-	72 35
Sundries sold at market,	-	37 10
20 acres in roads, gardens, woods, &c.		

106 acres.

\$4,200 20

* This crop promised to be very large, but was very greatly injured by mildew. It, however, was sold for the above sum, delivered at my barn.

As corn stalks, straw, &c. are seldom estimated by the full bred farmer, in the valuable amount of his crops, unless he happen to live near a town, where the straw may be sold; I have omitted them in the foregoing statement of my crop, lest the perpetual plougher and cropper might believe I wished to swell the amount. This makes it proper to remark, that when regular farming accounts are kept, the manure accounts should be debited to the crops of small grain and corn, for the straw and stalks. The latter has been considered by too many, as an article which costs labour, either to burn them, or plough them up. When the grounds, however, are properly prepared for crops, they will be found by those who try the experiment, fully equal, if not more valuable than straw, for littering the cattle yard.

It appears from the statement formed above, *that nearly a fourfold improvement was accomplished on this farm in the course of five years, from the practice that had been pursued; though many very injurious errors occurred in the course of that practice.* These greatly retarded the improvement of the soil, and were equally injurious to the products of it; especially of my fallow crops.

Every farmer who is in the habit of estimating the expense of cultivation, and that of taking his crops to market, may form a tolerably correct opinion of the clear profit which might be obtained from the produce, if subjected to his management.

But unless he were acquainted with the soil, on which these crops were grown, and also with the system of improvement, he could not readily form an opinion of the probable future annual increase of crops arising from an increased fertility of the grounds, and no calculation of mine can determine this sufficiently correct to hazard an estimate. I am, however, very confident that the fertility of the soil would have been very much increased, if the same system of management had been pursued during another round of crops, which would have terminated in the course of five years.

It was very obvious that the grass grounds were generally very deficient in fertility. This was made the more manifest by comparing the vegetation generally, with such spots as had been accidentally more highly enriched, and also with a part of the ground which had not been long enough cleared from its wood to be so much reduced by ploughing and cropping, as the land which had been longer cultivated.

Soiling, united with convertible husbandry, may be practiced with equal success by every farmer; *provided his cultivation be limited to an extent of clear ground, which will be consistent with his certain resources to cultivate it properly;* unless where a range outside of his cleared grounds, furnishes a sufficiency of pasture for his live stock.

If the cultivator be not in debt, and possess a pair of horses or a yoke of oxen, two milch cows, four young cattle, from one to

four years old, six sheep, and rear as many hogs as are sufficient for the use of the family, he may, with this stock, safely encounter twenty acres of cleared ground, and practise soiling, united to convertible husbandry; provided, himself, with the aid of the workers in his family, or those he can readily hire, and has money to pay, are sufficient to cultivate that quantity of land properly: especially as his live stock will increase with the increased fertility of the soil, if he give proper attention to that interesting portion of his management.

If the rotation of crops commonly practiced by me, be adopted, four acres will be annually in manured fallow crops, four in wheat and other small grain, and the remaining twelve in grass.

When the farmer's stock is kept in well constructed yards, profusely littered, the quantity of manure exceeds credibility. Although the greater part of that which is gathered through the winter consists of vegetable substances, they are well saturated with the rich juices of the cattle yard, which are lost by the improvident farmer. This mass being ploughed under the soil previously to fermentation, but little can be lost, if the crops be properly cultivated: and the roots of the grasses ploughed under with it, add greatly to the amount. The second and third crops of the grasses, when soiling is practiced, may be more profitably mowed and fed green, or in hay, to the live stock, than ploughed under for manure.

Twenty acres of ground will appear, to many American farmers, too little, even for those who actually do not possess the means to cultivate ten acres properly, if soiling be practiced. If they, however, would attentively compare the foregoing statements, some of them may alter their opinions; beside other things, which should induce them to do this, they will find the amount of products from the fallow crops grown by me, on fifteen acres of ground only, exceeded in value, the whole produce grown by Mr. Shriver, seventy-eight dollars, which sum would in most situations, pay the rent of fifteen acres of land.* They will also see, by reverting to my description of the cultivation of these fallow crops, that the corn crop, was very injudiciously managed.

* We particularly beg the attention of our upper country readers to the above paragraph; it well merits to be read over and over again. It appears from this statement, that the corn, barley, and corn-fodder produced by Mr. Lorain, on fifteen acres, sold for

	\$1,011 00
The value of Mr. Shriver's whole crop, from seventy-two acres,	
deducting the rents, was	933 86
The difference in favour of fifteen acres planted on the system of rotation, compared with seventy-two cropped in the good old common way, was	77 14

This statement will almost appear incredible to many. Let them try!—
Ed. of So. Ag.

The quantity of straw and corn stalks, furnished by the crops, enumerated by the foregoing statement, was estimated at fifty four and a half tons. These dried vegetable substances, together with the leaves raked from the woods, and other offal vegetable matters that may be gathered, will, when saturated well with the juices of the cattle yard, form a great weight, as well as bulk of manure. If we suppose the offal vegetable matter, gathered in 1811, sufficient, if the cattle, &c. were properly managed, to make fourteen hundred loads of manure, of thirty-two cubic feet each, which were the general size of my loads, it would cost the farmer thirty cents per load in the yard, and seven and a half cents per load for hauling it out to the field, or five hundred and twenty-two dollars for the whole, rating the leaves at the cost of raking and hauling, and the straw and corn stalks at three dollars per ton: also, charging the manure account, with the wages and board of the man and boy, and the labour done by the horse, employed in bringing in the grass."*—*Lorain's Husbandry*, p. 320.

As regards the way in which the clover, corn, potatoes, pumpkins, &c. which we recommend to be raised, are to be disposed of, and which cannot be sold to advantage by the planter high up the country, we would state, that these can be applied to feeding milch cows for butter, to fattening stock cattle, sheep and hogs, raising horses and mules; that there is extensive demand for, and a great consumption of all these things in Charleston and other towns, where the inhabitants are compelled to pay great prices for the various butcher meats; for their corn, butter, cheese, &c. most, if not all of which, come in from other States, and that all these articles can, besides, be exported like cotton or rice, and sold abroad.

The cows, oxen, sheep and hogs, being plentifully provided with food and litter, will, with the working horses or mules, be quiet and orderly, not given to rambling, but easily managed. The abundance of manure the whole of these would furnish from being regularly penned, would enable the planter to carry on his operations with great economy of time and labour, and to certain profit. We do not say much on the comfort of having such abundance of all that is needful in life, for that must strike the dullest comprehension; but we beg every one to remember that in

* This extract ought to have appeared in our last number, as referred to page 269, but was unavoidably postponed to the present, for want of room.—*Ed. of So. Ag.*

having considerable crops of *cotton* to dispose of; crops of *wheat and corn*; perhaps a few *horses*; *fat beaves, hogs and sheep*, for the Charleston market; that there is a greater certainty of *some money* coming in and being available, and less necessity for money going out, than on the present method of drawing light crops of cotton from worn out fields, without any comfort at all. A method which instead of improving the land and the planter's whole property, on the sure and solid plan we have ventured to recommend, is annually destroying both effectually; leaving field after field in a worse condition than before, while at last the plantation becomes useless and almost unsalable, and the planter himself, broken hearted, abandons his home, to seek relief in the western wilderness.

J. G.

ART. II.—*On the Science of Agriculture, comprising a commentary on, and comparative investigation of, the Agricultural Chemistry of Mr. KIRWAN, and Sir HUMPHREY DAVY; the Code of Agriculture of Sir JOHN SINCLAIR, Sir JOSEPH BANKS, and other authors on the subject. Shewing, &c. By JOSEPH HAYWOOD.*—London. Longman. 8vo. pp. 220. 1825.

OBSERVATIONS BY THE EDITOR.

We have, as will appear by a reference to our notes on "*Upper Country Cultivation and Enclosing*," recommended as strongly as we could the use of cattle manure, and supported the principle that the abundant and *judicious* use of it, in conjunction with rotation of crops, relieve us from the evils of worn out land, and the long list of its ruinous consequences; slender crops of inferior cotton; short crops of corn, wheat, &c.

If we have been strenuous in our endeavours to produce greater attention to the stock, the object was not the mere profit to be made by the sale of the cattle themselves, but because this was the only sure means of increasing *all our agricultural produce*, by the dung and manure created by their help. It is true, however, that we did not lose sight

of the addition to the industrious planter's income, by the sale of the cattle themselves; but in thus pressing the subject on our readers, and holding out the further inducement of interest, we hoped to divest the minds of many of our Southern Agriculturists, from the speculative way of thinking we have all got into, on the subject of *new manures*, or on the application of old manures in a *manner not usually practised*, and from thence inducing too many of our inexperienced planters to look for the *restoration* of their old worn out lands and exhausted fields, to some newly discovered short process of modern magical husbandry.

We have long thought that the beneficial effects of burying manures introduced since the application of chemistry to agriculture, was, to say the least of it, to be doubted—that it was not judicious, and have long wished to bring the subject forward for investigation of our correspondents.

We are well aware that the new system inculcates that the various gases, as they are developed in the decomposition of animal and vegetable substances, by putrefaction, can be retained in the soil, and made useful in nourishing all the crops planted, and that this opinion, and the wish to save the manure itself, which it is supposed would otherwise evaporate, or be washed away, occasion many to cover up all manures as speedily as possible. We believe it will be difficult to prove satisfactorily, that good consequences are ever derived from burying *any manures*, but especially such as are fresh; and we daily learn in conversation with experienced planters, that others besides ourselves, doubt the efficacy of this mode of restoring or keeping up the fertility of the soil, while they more than suspect that the consequences are extremely injurious to cotton, and to other crops of less value.

In this state of public opinion with us, on this most essential department of the planter's occupation, it is of vital importance to ascertain the opinions and reflections, and the result of the experience, of such other countries as are attentive to improvements in rural affairs. We confess we feel a pleasure in laying before our readers the following extracts from the volume before us, not only because they coincide with our own sentiments, but especially because Mr. Hayward supports his arguments, by very striking examples and facts, most, if not all of which will carry conviction to the mind of every cultivator of the soil.

We venture to recommend this treatise on the science of agriculture as a book well deserving the perusal of those who study and reflect on this subject. Its author is an independent writer, and differs from some of the most scientific men of the day; but he speaks as a man conscious of the strength of the ground he stands upon, and if he tries to point out the errors of others, he asks for support only as far as he proves what he says.

We need not call the attention of our readers further than the perusal of a part of Mr. Hayward's introduction to his countrymen, the British public, we are confident the interest they will take in the book, will carry them on. And certainly a writer who thinks Sir Humphry Davy mistaken; Sir John Sinclair in error; that Sir Joseph Banks has misled the public, and Mr. Knight uttered falacious opinions; who has been countenanced by the public, in opposition to the Horticultural Society of London, ought to be heard even on our side of the Atlantic, where every man judges for himself. If his reasoning is conclusive, he will have many followers in returning to old agricultural customs amongst our Southern planters, even amongst those who were first to follow the recommendations of modern scientific writers on this difficult subject.

"After the numerous books of late published on the subject of agriculture, and particularly those of Mr. Kirwan, Sir Humphry Davy, Sir John Sinclair, Sir Joseph Banks, and others, another may appear superfluous; but all who have read those different authors with attention, must have been convinced that however elaborate their works, there is such a discrepancy in their opinions on some of the most important operations of agriculture, as to justify an attempt to bring them to the test of a just investigation and comparison, by tracing their principles in their progress from cause to effect. I am not a professor of chemistry, nor an extensive practical agriculturist, nor the member of any learned society: and as it is the fashion of the times to attach great importance to such authority, some may consider me arrogant, presumptuous and invidious, in attempting to intrude on the public my commentaries on the works of such established characters: but I disclaim any other intention, than that of ascertaining and establishing just principles, and I cannot hope to induce any one to adopt my notions in preference to others, unless I prove theirs to be wrong. My ideas on the science of horticulture have long been before the public; and the critics remarked on that work, that I was

more bold than politic : but what sort of policy must it be to deter an Englishman from appearing as the advocate of truth and science ? If they mean that by my boldness in endeavouring to point out what I conceived to be the errors of others, and to rectify that which I had proved to be bad in practice, I lost the patronage of the Horticultural Society of London, they may be correct ; for this, as a body, I certainly could not obtain, although previous to the publication of that work, I privately submitted the same to some of the first public characters, and particularly to Sir Humphry Davy, and to the president and council of the Horticultural Society. Sir Humphry very politely received and acknowledged the perusal of my papers, and with great liberality stated his admission, that to that part of my work which related to the objects of his peculiar study, he found no objection ; at the same time excusing himself from giving an opinion on the practical part, by observing, he did not consider himself possessed of sufficient practical knowledge to give it importance, and expressed his intention to commend me to the president of the Horticultural Society. I dedicated my book to the president and society, and repeatedly applied to them for their opinion, and invited them to an investigation of my demonstrations, but which they uniformly refused ! Nearly six years have now elapsed, and I have never seen any comment of his or theirs on it : however, the public having done me the honour to have purchased the first edition, and good part of the second, assures me it cannot now be suppressed ; and whether the improvements I had established, were or were not received and treated as they deserved, time will show. Every man has a right to confide in his own understanding, and if his conscience does not accuse him of having presumed to violate truth, or pluming himself on his fancied powers, to have imposed false and untried theories on the ignorant and credulous, he need not fear others. Fortune may enable pride and arrogance to smother truth and science for a time, but in a land of liberty these must ultimately establish themselves, however humble their immediate patrons. Although the Horticultural Society of London have refused to acknowledge the merit of my arrangement and explanation of scientific principles, they must ultimately adopt them, or be left far in the back ground, and their garden exhibit a glaring instance of a want of candour and liberality in the directors.

“ Repeated observation and demonstrative experiments have convinced me, that although Sir Humphry Davy’s analysis, and expositions of chemical principles, are correct and clear, in his application of them to agricultural practice, and in his inferences, he is greatly mistaken.

“ That although Sir John Sinclair, is copious and minute in his description of agricultural operations and practical results, his opinions and deductions are erroneous and inconclusive.

"That Sir Joseph Banks, in his opinion and description of the rust or black blight in wheat, has mistaken the effect for the cause, and thus misled the public in their endeavours to find a remedy.

"That Mr. Knight's opinions and expositions, as quoted by Sir John Sinclair and Sir Humphry Davy, are hypothetical and fallacious.

"That Bakewell's principles and practice in breeding, condemned by Sir John Sinclair, and neglected by the generality of agriculturists, are founded on true scientific principles, and are the most correct and beneficial that can be followed.

"That the practice of Jethro Tull and Mr. Curwen is grounded on just scientific principles; although these are not recognized, or not explained by them.

"That the methods in general practice, of preparing and applying manure, are erroneous and imperfect.

"And that the defects I have described being removed, and the remedies and practices I have explained adopted; much increase, and more certainty in the produce of the land, may be obtained."

We think the subject handled by our author, of so much importance that we shall give very copious extracts from the work in some future number, at present we have only room for the following :

"Notwithstanding all that has been said to establish the opinion, that sea-salt is a valuable manure, I am convinced it never can, as an article of food, contribute to the increase of any vegetable; but as a chemical agent, by destroying, and facilitating the decomposition, of animals and vegetables, or by its *deliquescence* it may in some instances increase the fertility of the soil." p. 101.

"Sir Humphry says, 'In the writings of scientific agriculturists, a great mass of facts may be found in favour of the application of farm yard dung in a recent state. Mr. Young, in an Essay on Manures, which I have already quoted, adduces a number of excellent authorities in support of the plan. Many who doubted have been lately convinced; and, perhaps, there is no subject of investigation, in which there is such a union of theoretical and practical evidence. I have myself, within the last ten years, witnessed a number of distinct proofs on the subject. I shall content myself with quoting that which ought to have, and which I am sure will have, the greatest weight among agriculturists.—Within the last seven years, Mr. Coke has entirely given up the system formerly adopted on his farm, of applying fermented dung: and he informs me that his crops have been since, as good as they ever were, and that his manure goes nearly twice as far.'

"This doctrine, in a general sense, and compared with the old practice, agrees perfectly with my observation and experience ; but Sir Humphry does not state, whether the dung is immediately ploughed in, by Mr. Coke, or suffered to lie on the surface ; and the difference between those two modes of application, will be found to be very important, by every person who will try them.

"I shall hereafter state my reasons *why it is improper, as a general practice, to manure lands that are intended for immediate seed crops* ; but there may be cases where the state of the soil, from extreme poverty and other circumstances, require it ; and in those cases, I am convinced that the best time and manner of supplying dung for such crops is, by spreading it over the surface after the seeds are sown : at first sight, and according to Sir Humphry's notions, this may appear to be a wasteful practice ; but it is far otherwise : for, as Sir Humphry says, 'Organic substances, as soon as they are deprived of vitality, begin to pass through a series of changes, which ends in their complete destruction, in the entire separation and dissipation of the parts.—Animal matters are the soonest destroyed by the operation of *air, heat, and light*. Vegetable substances yield more slowly, *but finally obey the same laws*. The periods of the application of manures, from decomposing animal and vegetable substances, depend upon the knowledge of these principles.'

"Now, notwithstanding the manner of applying dung, which I recommend, that of spreading it over the surface, and there permitting it to remain, before it be ploughed in, twelve months or more, *is directly opposite to that recommended by Sir Humphry, it will be found more completely accordant with the above principles*, as well as with those of Mr. Kirwan : for, by leaving dung openly spread on the surface, it is evident that the influence of the air, the heat of the sun, and light, will be the least controlled or obstructed ; and, consequently, the decomposition will be more rapid, regular, and conformable to the wants of the plants. Under such circumstances, more *carbonic acid* may be generated ; but as this elastic fluid is heavier than the atmospheric air, it will fall on and penetrate the open surface of the soil, and thus accord in effect with the experiments cited by Mr. Kirwan, of Dr. Priestley and M. Ruckett. And as to any loss arising by the evolution of any other gases, they are less likely to occur from dung in this situation than when buried ; for *carburetted hydrogen gas* is formed in the greatest quantity during the putrefactive fermentation, and when the substances are immersed in, or glutted with water, and *excluded from the air and light* ; and in this state they most generally are when buried : and this gas possessing an opposite quality to the carbonic acid gas, in being much lighter than the atmospheric air, will, as it is formed, operate in a reverse manner to the carbonic acid ; it will immediately, on being liberated, penetrate the surface of the soil, mount

rapidly into the atmosphere, and pass off with the wind, and be thus lost. And further, it is well known that animal and vegetable substances, decomposed by the cold putrefactive fermentation under the earth, or at the bottoms of stagnant ponds, are inert and inefficient; at least, until they are made to undergo some other chemical change, by calcination, oxydation, &c.; this is evinced by peats, bogs, &c.

"We may likewise instance the effect of the accumulated animal substances, decomposed under the earth in burial grounds, which never exhibit any comparatively extraordinary luxuriance of vegetation. And, as a practical demonstration that dung, when laid on or near the surface, and repeatedly turned over and exposed to the action of the atmosphere, *is not very rapidly or very effectually exhausted*, I shall state a course of operations which were carried on in a field of about six acres, within my immediate observation.

The soil of this field was a fine friable loam, and of a black colour, but the surrounding land, although of the same texture, was of a foxy brown; this difference in the colour, no doubt, was occasioned by the difference in cultivation and manuring. The surrounding lands had been treated in a careless slovenly manner, as a common farm; whilst the field in question was cultivated as a market garden, cropped with esculent vegetables, and manured at least once in the year for many years. At the period it came under my notice, the market gardener had died, and it fell into the hands of another person, who having but seven years to run of a lease, determined, as he said, to work it out; he therefore sowed it with white wheat for five years following, without giving any manure. The first year, it produced forty-eight bushels per acre, and every year after the crops declined three or four bushels, per acre. The sixth year, it was planted with potatoes, without manure, and the crop averaged fourteen tons per acre. The seventh year it was sown again with wheat, without manure, and it produced upwards of thirty-two bushels per acre.

"And to show the beneficial effects of top-dressing, I shall also state that about this time, I took possession of a field of pasture land, of about twenty acres, a strong yellow or foxy clay; it lay on the side of a hill, and was very wet and poachy, particularly during winter; had been generally cut for hay, although it seldom produced more than three-fourths of a load per acre, and this not until the end of July. I drained it by cutting a ditch at the upper side, deep enough to get below the stratum of clay, which in some places was upwards of five feet, turning the water down the sides, and gave it a top-dressing of scavenger's manure, the cleaning of the town streets; and the year after, it produced me a load and a half per acre, in the middle of June; and a second crop, of three fourths of a load, the beginning of September;

and this it continued to do, varying a little, more or less, according only as the seasons were wet or dry.

"And to show the effect of dung buried deep; the following instance may be sufficiently strong. I had noticed a field at Wickham in Kent, which was laid down for a cherry orchard, and planted with fine young healthy standard trees, that for two years made a beautiful and luxuriant growth, and the third year, in the spring, they threw out their shoots with equal luxuriance; but before summer, I observed to my astonishment, they were all withered and dead. Not being able to assign a cause for such an unusual failure, I called on the proprietor to inquire how it happened; he seemed perfectly resigned to what he called his ill luck, in having them struck with a blight; however, perceiving no reason why his trees should be blighted, whilst his neighbours all around, should escape uninjured, I inquired farther as to the nature of the subsoil, &c., when he told me he had been at great expense and trouble to prepare the soil, by giving it a thick covering of rich stable dung, and trenching it in, a spit and a half deep with the spade. I observed the trees had thrown out a profuse discharge of gum, and have no doubt, that during the first two years, the roots had not penetrated the dung, but on reaching it the third year, they were poisoned; or so glutted with such impure food, as to be thus diseased and destroyed.

"Whatever devastation may be committed by the insect or fungus tribe, to trees or plants, I am convinced that by far the greatest extent of injury, from what is placed to the account of canker, mildew, &c. if correctly investigated, will prove to originate in the unwholesome supply, or impurity of the food.*

"As to the objection, that by leaving dung on the surface, a too rapid decomposition of the manure, will be followed by a too rapid consumption of food; it may be said, 'a man cannot eat his cake and have it too.' Let the crop be suited to the manure, or the manure to the crop, *and as long as he gets its full value, he will have little reason to complain of its coming into his pocket too quick*; the sooner he gets a profitable return for one dressing of dung, the sooner he can afford another; and if a proper course of crops be taken, he may go on a long time without feeling cause to complain that his lands are too prolific, or too rich.

"To be consistent, we must either stick to chemical principles, or give them up. The difference in the effect of the method I recommend, of applying manure on the surface, and there to suffer it to remain the longest period convenient; and that, by Sir H. Davy, of burying it immediately; may be determined by the comparative formation and effect of the two gases, carbonic acid, and carburetted hydrogen. If the former be, as stated, a principal ingredient in the food of plants, and that by its gravity it

* We beg the attention of cotton planters to this remark!—*Ed. of So. Ag.*

will penetrate into the soil, no method more favourable for its generation and equal distribution can be devised, than by my mode of application; and if carburetted hydrogen be either an unwholesome food, or by its rapid escape, the occasion of a great waste of carbon; and nitrogene gas be poisonous, or obnoxious, when in contact with the food; no mode can be more favourable to, or productive of, both those effects, than burying the dung in an unfermented state." pp. 127-135.

PART III.

MISCELLANEOUS AGRICULTURAL ITEMS.

[COMMUNICATED FOR THE SOUTHERN AGRICULTURIST.]

The United Agricultural Society of South-Carolina, held its stated annual meeting in Columbia, on the 16th December last, when the following Societies appeared by their Delegates, to wit:

The Agricultural Society of St. John's, Colleton, represented by W. B. Seabrook, J. Townsend, and J. W. Mathewes; the Agricultural Society of South-Carolina, Charleston, by James Rose, James Ferguson, and Thomas Smith, jr.; the St. Helena Island Society, by D. Scott, and Joseph J. Pope; the St. Andrew's Agricultural Society, by Wm. Cattell and Winborn Lawton; the Pendleton Farmers' Society, by Col. F. K. Huger and the Hon. David Sloane; the Beaufort District Society, by the Hon. Wm. Pope; the Beaufort Agricultural Society, by Wm. Elliott; the Winyaw Farming Society, by the Hon. E. Flagg, and R. F. W. Allston; the Farmers' Society of Barnwell, by the Hon. Angus Patterson.

An address, distinguished alike by great research and high patriotic feeling, was delivered to a large audience, in the hall of the House of Representatives.

A communication was received from Mr. N. Herbemont, exhibiting the causes of failure in his wine crop, and pointing out the means to alleviate the agricultural distresses of the State, which, on motion, was ordered to be published in the "*Southern Agriculturist*."

The following officers were elected for the next two years:—Col. Thomas Pinckney, of Pendleton, *President*; James Fer-

guson and Thomas Smith, jr. Esqs. *Vice Presidents*; Wm. Elliott, Esq. *Treasurer*; R. F. W. Allston, *Recording Secretary*; Joseph N. Whitner, Col. Cattell, Wm. H. Hay, James Ferguson, W. Elliott, Joseph J. Pope, Col. Benjamin Green, and J. W. Mathews, *Committee of Correspondence*.

At the Anniversary of the "*St. Andrew's Agricultural and Police Association*," held on the 7th April, at the Club House, James Island, the following gentlemen were elected officers of the Society for the ensuing year, viz: Winborn Lawton, *President*; John B. Girardeau, *Secretary and Treasurer*; T. H. S. Thayer, Wm. S. Godber, Wm. M. Parker, and John Wescote, *Standing Committee*; John Rivers, Joseph B. Hinson, and Joseph B. Rivers, *Agricultural Committee*; Joseph M. Maxcy and J. J. Mikel, *Stewards*. Mr. Lawton was appointed to deliver the next address.

The Society was honoured with the company of the Hon. Whitmarsh B. Seabrook, who had been elected an honorary member, and been invited to participate in the celebration. A committee on behalf of the Society, met Mr. Seabrook, and addressed him, to which he made a suitable reply.

Several reports were read from the Agricultural and Police Committees. A silver cup, the premium for raising the finest cotton on the Island, was conferred on Joseph Bee Rivers, Esq. The anniversary address was then delivered by the Rev. Dr. Leland, with which the Society was highly edified and delighted. A committee was appointed to return their thanks, and request a copy for publication.

QUERY.

I wish to know how your correspondent "M." of Beaufort District, (in vol. I. p. 163,) manages to raise potatoe slips on poor worn out land. W.

☞ Our correspondent "M." does not treat on the subject of the above Query, but on *root-potatoes*, raised on *cow-penned* land. *We are confident he will oblige many, however, by complying with the request of the Querist!*—Ed. of So. Ag.

☞ We beg our readers to strike out the paragraph in page 323, line fourth, beginning at "The merits of convertible husbandry," and ending at the word "horses," as it was inserted by mistake.